

(c) Firetube boilers which cannot be entered or which cannot be satisfactorily examined internally, all boilers of lap seam construction and all boilers to which extensive repairs have been made or the strength of which the marine inspector has any reason to question, shall be subjected to a hydrostatic test of $1\frac{1}{2}$ times the maximum allowable working pressure. All other boilers shall be subjected to a hydrostatic test of $1\frac{1}{4}$ times the maximum allowable working pressure.

(d) In applying hydrostatic pressure to boilers, arrangements shall be made to prevent main and auxiliary stop valves from being simultaneously subjected to the hydrostatic pressure on one side and steam pressure on the other side.

(e) If the marine inspector has reason to believe that the boiler has deteriorated to any appreciable extent under the bottom where it rests on saddles or foundations, he shall cause the boiler to be lifted to such position that it can be thoroughly examined, provided the examination cannot be made otherwise.

(f) The marine inspector may require any boiler to be drilled or gaged to de-

termine actual thickness any time its safety is in doubt. At the first inspection for certification after a firetube or flue boiler has been installed for 10 years, it shall be gaged to determine the extent of deterioration. Thickness will be measured at or near the waterline, at the bottom and at such other places deemed necessary by the marine inspector. Examination may be by drilling or a nondestructive means acceptable to the marine inspector. Prior to the use of a nondestructive method of examination, the user shall demonstrate to the marine inspector that results having an accuracy within plus or minus 5 percent are consistently obtainable when using specimens similar to those to be examined on the boiler.

(g) If the thickness is found to be less than the original thickness upon which the maximum allowable working pressure was based, it shall be recalculated. The thickness of the thinnest measured portion shall be used in this calculation. Either the design formulas given in this subchapter or the ones in effect when the boiler was contracted for or built may normally be used in this recalculation. In no case will an increase in the pressure allowed be made.

TABLE 61.05-10—INSPECTION INTERVALS FOR BOILERS^{1 2 3}

	Firetube boiler ≥ 150 psi	Watertube boiler	Any firetube boiler for propulsion	Firetube boiler < 150 psi
Hydro Test:				
Passenger Vessel	2.5	2.5	1	2.5
Other Vessel	2.5	5	1	5
Fireside Inspection	1	2.5	1	2.5
Waterside Inspection	1	2.5	1	2.5
Boiler Safety-Valve Test	1	2.5	1	1
Valves Inspection	5	5	5	5
Studs and Bolts Inspection	10	10	10	10
Mountings Inspection	10	10	10	10
Steam Gauge Test	2.5	2.5	2.5	2.5
Fusible Plug Inspection	2.5	2.5	2.5

¹ All intervals are in years.

² Where the 2.5-year interval is indicated: two tests or inspections must occur within any five-year period, and no more than three years may elapse between any test or inspection and its immediate predecessor.

³ Intervals for hybrid boilers are the same as for firetube boilers.

[CGFR 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGD 80-064, 49 FR 32193, Aug. 13, 1984; CGD 83-043, 60 FR 24781, May 10, 1995; USCG-1999-4976, 65 FR 6500, Feb. 9, 2000]

§ 61.05-15 Boiler mountings and attachments.

(a) Each valve shall be opened and examined by the marine inspector at the interval specified in Table 61.05-10.

(b) Each stud or bolt for each boiler mounting that paragraph (c) of this

section requires to be removed may be examined by the marine inspector.

(c)(1) Each boiler mounting may be removed from the boiler and be examined by the marine inspector at the interval specified by Table 61.05-10 when any of the following conditions exist:

(2) Where boiler mountings or valves are attached to boiler nozzles and a satisfactory internal examination of these mountings or valves and their attaching studs, bolts, or other means of attachment, can be performed by opening up the valves, such mountings or valves need not be removed from the boiler unless in the opinion of the Officer in Charge, Marine Inspection, such action is necessary.

(d) The Officer in Charge, Marine Inspection, may require the examinations prescribed in this section to be made at more frequent intervals, if in his opinion such action is necessary to be assured of the safety of the boiler and its attachments.

(e) Water columns, gage glasses, and gage cocks shall be examined to determine that they are in satisfactory working order.

(f) Each steam gauge for a boiler or a main steam line may be examined and checked for accuracy by the marine inspector at the interval specified by Table 61.05-10.

(g) Each fusible plug may be examined by the marine inspector at the interval specified by Table 61.05-10.

[CGFR 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9980, June 17, 1970; CGD 83-043, 60 FR 24782, May 10, 1995]

§ 61.05-20 Boiler safety valves.

Each safety valve for a drum, superheater, or reheater of a boiler shall be tested at the interval specified by table 61.05-10.

[CGD 95-028, 62 FR 51202, Sept. 30, 1997]

Subpart 61.10—Tests and Inspections of Pressure Vessels

§ 61.10-1 Scope.

All pressure vessels aboard ships, mobile offshore drilling units, and barges are subject to periodic inspection.

[CGD 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGD 73-251, 43 FR 56801, Dec. 4, 1978; CGD 95-012, 60 FR 48050, Sept. 18, 1995]

§ 61.10-5 Pressure vessels in service.

(a) *Basic requirements.* Each pressure vessel must be examined or tested every 5 years. The extent of the test or examination should be that necessary to determine that the pressure vessel's condition is satisfactory and that the pressure vessel is fit for the service intended.

(b) *Internal and external tests and inspections.* (1) Each pressure vessel listed on the Certificate of Inspection must be thoroughly examined externally every 5 years.

(2) In addition, each pressure vessel listed on the Certificate of Inspection that is fitted with a manhole or other inspection opening so it can be satisfactorily examined internally, must be opened for internal examination every 5 years.

(3) No pressure vessel need be hydrostatically tested except when a defect is found that, in the marine inspector's opinion, may affect the safety of the pressure vessel. In this case, the pressure vessel should be hydrostatically tested at a pressure of 1½ times the maximum allowable working pressure.

(c) *Special purpose vessels.* (1) If your vessel's Certificate of Inspection is renewed annually, the following must be examined under operating conditions at each inspection for certification: all tubular heat exchangers, hydraulic accumulators, and all pressure vessels used in refrigeration service.

(2) If your vessel's Certificate of Inspection is renewed less often than annually, the following must be examined under operating conditions twice every 5 years: all tubular heat exchangers, hydraulic accumulators, and all pressure vessels used in refrigeration service.

(3) No more than 3 years may elapse between any examination and its immediate predecessor.

(d) *Hydrostatic tests under pressure.* Each pressure vessel, other than one exempted by this section, must be subjected to a hydrostatic test at a pressure of 1¼ times the maximum allowable working pressure twice within any five-year period, except that no more than three years may elapse between any test and its immediate predecessor.